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The pain experience of Hispanic Americans: A critical literature review and conceptual model

Nicole A. Hollingshead, M.S., **Leslie Ashburn-Nardo, Ph.D.**, **Jesse C. Stewart, Ph.D.**, and **Adam T. Hirsh, Ph.D.**

Department of Psychology, Indiana University – Purdue University Indianapolis, Indianapolis, IN

Abstract

Although Hispanics are a burgeoning ethnic group in the United States, little is known about their pain-related experience. In order to address this gap, we critically reviewed the existing literature on the pain experience and management among Hispanic Americans (HAs). We focused our review to the literature on non-malignant pain, pain behaviors, and pain treatment seeking among HAs. Pain management experiences were examined from HA patients' and healthcare providers' perspectives. Our literature search included variations of the term "Hispanic" with "AND pain" in PubMed, Embase, Web of Science, ScienceDirect, and PsycINFO databases. A total of 117 studies met our inclusion criteria. We organized the results into a conceptual model with separate categories for biological/psychological and sociocultural/systems-level influences on HAs' pain experience, response to pain, and seeking and receiving pain care. We also included information on healthcare providers' experience of treating HA patients with pain. For each category, we identified future areas of research. We conclude with a discussion of limitations and clinical implications.

Keywords

Hispanic Americans; Non-malignant pain; Pain management; Critical review; Pain disparities; Ethnic differences

All persons experience acute pain in their lifetime, and it is estimated that 100 million individuals experience chronic pain in the U.S.[72] Racial/ethnic minorities report more pain and have a higher prevalence of pain conditions compared to non-Hispanic Whites

Corresponding author: Adam T. Hirsh, Ph.D. Department of Psychology, IUPUI, 402. N. Blackford, Indianapolis, IN 46202, USA. athirsh@iupui.edu. Phone: +1 (317) 274-6942.

Conclusions

We conducted a literature review on Hispanic Americans' pain and management experiences. We propose a conceptual model with current findings and future areas of research.

Disclosures

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(NHWs).[72] Reviews suggest that these racial/ethnic differences in pain experience may be due to differences in pain processing, pain coping strategies, and cultural factors.[6,40,122] Moreover, although pain accounts for 80% of all physician visits,[55] many patients – particularly racial/ethnic minorities[6,94,127] – receive inadequate management for non-malignant pain.[17]

To date, the pain literature has focused largely on racial differences. Racial categories, such as Black and White, are used to differentiate groups that are related by blood, descendants, and ancestry as well as groups that share distinctive physical characteristics.[40] Reviews of this literature have found that Black and White individuals report different clinical and experimental pain experiences,[40] and that Black patients frequently receive unequal pain care relative to White patients.[58,94,127]

Ethnic categories often include race (e.g., non-Hispanic White) but further distinguish between groups of people who share similar behaviors, beliefs, and culture.[40] The U.S. Census Bureau and National Institutes of Health currently recognize two ethnic groups: (1) Hispanic or Latino and (2) Not Hispanic or Latino.[44,102] Hispanic ethnicity is defined as the heritage, nationality group, lineage, or country of birth of a person or person's relatives/ancestors before arriving to the U.S.; more specifically, "Hispanic or Latino" refers to a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.[44] Relatively little is known about ethnic differences in the pain experience. This knowledge gap is striking given that Hispanic Americans (HAs) represent 16% of the U.S. population and are one of the fastest growing demographic groups in the U.S.[44] Furthermore, HAs have the highest rates of being uninsured and face the greatest barriers to obtaining health insurance of all racial and ethnic groups in the U.S.[18,73]

Using previous reviews of racial differences in pain as a framework, our aim was to examine the pain and pain management experiences of HA patients, as well as the experience of providers who manage HA patients' pain. Important differences in pain experience and management between HAs and other racial/ethnic groups (e.g., NHWs, non-Hispanic Blacks [NHBs]) are highlighted. We proposed a conceptual model to frame this review and guide future research on this under-studied but rapidly growing population. We conclude with a discussion of limitations and clinical implications.

Methods

Search strategy

Specified terms were used in combinations to search for articles on PubMed, Embase, Web of Science, ScienceDirect, and PsychINFO. The search terms for Hispanic (i.e., "Latino," "Latina," "Hispanic," "Ethnic," and "Ethnicity") were combined with "AND Pain" for each search. We also examined the reference lists of relevant articles for additional studies.

Inclusion and exclusion criteria

Abstracts and articles were examined to determine the eligibility of each record. Records were excluded if the article solely examined: [1] a non-adult population (<18 years of age), [2] malignant pain, [3] a non-Hispanic sample, or [4] Hispanics outside of the U.S. Records

were further excluded if the article: [5] did not report results on HAs, specifically, [6] was a case report, [7] was a review article, [8] was not written in English and an English translation could not be located, or [9] was a conference presentation and no published article could be located. Articles that examined a specific HA subgroup (e.g., Mexican Americans) were included, and group membership is specified in the review. For this review, we did not impose unitary definitions of race, ethnicity, or Hispanic American; rather, we used the definitions adopted in each manuscript. Aside from excluding case reports and review articles, we did not prioritize particular study designs for this review.

Results

Across all databases and keyword searches, we identified 418 unique records. After review, 309 records were excluded for the following reasons: [1] non-adult sample (n=46), [2] malignant pain (n=56), [3] non-Hispanic sample (n=105), [4] failed to report on HAs, specifically (n=47), [5] Hispanics outside of U.S. (n=11), [6] case report (n=14), [7] review article (n=17), [8] non-English study (n=1), and [9] conference presentation (n=12). The electronic database search yielded 109 articles that met inclusion criteria. Examination of reference lists yielded an additional 8 relevant articles. A total of 117 articles were included in this review.

Conceptual model

The organization of our results was guided by a conceptual model. Our model was adapted from “the social communication model of pain.”[33] This model, as well as the model proposed herein, explicitly acknowledges patient, provider, and contextual factors that influence the experience and management of pain. Such a multilevel perspective is critical to understanding the pain experience of different ethnic groups.

Figure 1 presents our proposed model, which incorporates the existing evidence base and identifies future areas of research (in italics). Organization of the model was based on study results, theory, and/or co-author consensus; factor placement within the arrows is organized by quality and level of evidence. The conceptual model also guided our examination and interpretation of the literature. Thus, the model both informed and was informed by our examination of the micro-level (biological and psychological; top portion of the model) and macro-level (sociocultural and systems-level; bottom portion of the model) factors that influence HAs’ experience of pain, response to pain, decision to seek pain care, and experience of receiving pain care. We also examined the psychological and systems-level factors that influence healthcare providers’ care for HA pain patients. Although some of the factors in our model could be considered as micro- and/or macro-level factors, we placed them in the model according to how they have been conceptualized and measured in the relevant literature. For example, acculturation could be considered at the micro- and/or macro-level, however, we included it as a micro-level factor in the model because it has been measured as an individual-level variable in the reviewed articles.

Prevalence of Pain

The majority of national surveys found HA respondents report fewer pain conditions compared to NHW and non-Hispanic Black (NHB) respondents (Table 1). Compared to NHWs, HAs reported significantly lower rates of chronic pain,[109] neck pain,[107,126] acute and chronic back pain,[24,79,107,126] temporomandibular joint and muscle disorder (TMJMD)-type pain,[107] lower and upper extremity pain,[109] and diagnosed arthritis.[26] A few studies found the converse or no differences. One survey found HAs reported higher rates of chronic head/neck and abdominal pain than NHW and NHB respondents.[109] Other studies found that HAs reported statistically similar rates of chronic chest pain,[109] back pain,[109] chronic neck pain,[24] and headache/migraine pain[107] relative to NHWs. Two examinations of the National Health and Nutrition Examination Survey (NHANES) found that Mexican Americans (MAs) had significantly lower odds of reporting overall chronic pain, chronic widespread and regional pain, back pain, and upper and lower extremity pain than NHW and NHB respondents, but greater odds of reporting chronic head and abdominal pain.[63,68] A study examining 2003–2004 NHANES data found that HA and MA men and women reported significantly less chronic widespread and regional pain yet similar rates of acute pain compared to NHW men and women, respectively.[116]

Several surveys examined pain prevalence rates within the HA population. Of the approximately 23,000 HAs surveyed, 24.4% reported experiencing low back pain, 15.6% reported migraine/headache pain, and 12.8% reported neck pain during the past 3 months.[107] One national survey found HA and MA women reported higher rates of acute and chronic pain compared to their male counterparts.[116] Based on respondents' country of origin, Puerto Rican Americans (PRAs) reported higher rates of chronic abdominal pain than Cuban Americans (CAs) and MAs.[90] Results from The National Latino and Asian American Study and The National Survey of American Life indicated that native-born HAs had a higher prevalence of chronic pain conditions (i.e., back pain, headache, arthritis, ulcer) than foreign-born HAs.[25]

Experience of Pain

Increased pain severity and sensitivity

HAs report experiencing more severe pain relative to NHWs. In national surveys, compared to NHW respondents, HAs report more severe chronic pain,[24] chronic joint pain,[14,26] and average chronic pain over the past week,[101,109] as well as fewer pain free days.[59] In clinical investigations, compared to NHWs, HAs report more severe chronic pain,[9,50,113] acute postoperative pain,[46] and acute fracture pain.[11] Some clinical investigations found similar pain severity ratings between HAs and NHWs for chronic pain,[42] postoperative pain,[93] pain in the emergency department (ED),[34,85] and pain in patients with diabetes and hypertension.[106] One focus group investigation of patients who experienced toothache pain found that HAs reported the lowest pain severity levels compared to NHW and NHB patients; however, the focus group format could have led to socially desirable responding and unreliable results.[31] Reasons for HAs' reports of greater pain severity have not yet been investigated.

Experimental investigations have found HA participants report greater pain sensitivity and less pain tolerance than NHW participants.[111,133] This difference may be especially true for individuals who strongly identify with their Hispanic ethnicity. For instance, one investigation had participants complete a measure of ethnic identity (one's knowledge or membership in an ethnic group; using the Multi-Group Ethnic Identity Measure), and found that stronger ethnic identity in HAs was associated with more pain sensitivity across pain tasks.[111] This finding suggests that ethnic identity accounts for some of the racial/ethnic differences found in pain sensitivity, and that Hispanic culture affects the pain experience at both the social and biological/nociceptive processing level.[111] Conversely, one investigation with chronic spinal pain patients found that, compared to NHW and NHB patients, MA patients endured higher levels of ischemic pain before determining that it matched their back pain, indicating a higher pain tolerance.[84] Additional experimental studies are needed to determine whether this contradictory finding is due to a difference in population (clinical vs. healthy), Hispanic origin (MAs vs. HAs, broadly defined), and/or experimental methods.

Pain comorbidities

In general, the majority of studies have found similar rates of pain comorbidities (i.e., conditions that commonly co-occur with pain) in HAs relative to NHWs and NHBs; however, there has been little research in this area.

Depression is highly comorbid with pain and can lead to more functional impairment and worse patient outcomes.[7] Two large surveys of HA, NHW, and NHB chronic pain patients found similar rates of self-reported depressed mood[109] and depression symptoms (as measured by the Beck Depression Inventory).[42] A mostly MA sample with rheumatoid arthritis reported more depressive symptoms and were more likely to have scores above the clinical cut point for depression (as measured by the Center for Epidemiologic Studies – Depression scale; CES-D) than NHW and NHB patients.[45] Although limited, the available evidence indicates similar rates of chronic pain and comorbid depression across HA and other racial/ethnic groups, but these results may not generalize to MAs, specifically.

A few investigations have examined differences in rates of comorbid depression within the HA population. Among HAs with orofacial pain, women and older individuals were significantly more likely to experience comorbid depression than men and younger individuals, respectively.[114] A review of 1982–1984 Hispanic Health and Nutrition Examination Survey (HHANES) data found that almost half (47%) of PRAs with chronic abdominal pain were above the CES-D clinical cut point for depression – a rate that was almost double the one found in a group of both CAs and MAs (27%).[90] Moreover, compared to HAs without chronic pain, rates of suicidality (i.e., death ideation, wanting to die, and suicidal ideation) were doubled in the HA chronic pain population, and approximately 10% of CAs and MAs and 20% of PRAs with chronic abdominal pain reported a previous suicide attempt.[89] This finding is striking in that the suicide attempt rate among PRAs was higher than the national average.[89] These findings suggest that PRAs may be at elevated risk for developing comorbid depression and for suicide relative to other racial/ethnic groups.

Anxiety is also highly comorbid with pain and has been shown to augment individuals' pain severity and lead to greater disability.[55] One investigation found MA and NHW patients with

acute postsurgical pain reported similar rates of state and trait anxiety.[22] Another found that HA patients with chronic pain endorsed significantly higher levels of pre- and post-treatment pain-related anxiety than NHW and NHB patients.[50] To date, no investigation has examined differences in rates of comorbid anxiety disorders (e.g., generalized anxiety disorder, post-traumatic stress disorder) or examined the effects of anxiety on HAs' pain experience and outcomes.

Problems falling and staying asleep are common complaints among patients experiencing pain.[98] A national survey of chronic pain patients found HAs reported fewer instances of disturbed sleep compared to NHWs and NHBs.[109] Within the HA population, one investigation found that more recent immigration to the U.S. was associated with fewer reported sleep problems among patients with orofacial pain.[114] However, because recent immigration was associated with less orofacial pain, differences in sleep problems may be due to recent immigrants experiencing less pain interference than due to nativity.[114] Given that sleep is an important factor for pain and everyday functioning, the rates of sleep disturbance and prevalence of comorbid sleep conditions (e.g., insomnia) should be investigated further in the Hispanic population.

Pain interference

Relative to NHWs, HAs experiencing acute or chronic pain report significantly lower rates of activity limitation,[106,113] fewer problems with mobility and usual activities,[54] and fewer problems with physical functioning.[24] A national survey found Hispanics with chronic pain were less likely to report an inability to do household chores and inability to work compared to NHWs and NHBs.[109] Among employed respondents, Hispanics reported fewer hours of missed work in the prior month compared to NHB respondents but similar hours of missed work compared to NHW respondents.[109] However, differences in pain interference are not entirely consistent. One national survey found similar rates of pain interference between Hispanics and NHWs with chronic pain.[101] Another survey of respondents who experienced a toothache found Hispanics endorsed more frequently that pain interfered with their caregiving responsibilities and their ability to work compared to NHW and NHB respondents.[30] Differences in measuring pain interference (e.g., global versus domain-specific measures) may account for these inconsistent findings. Additionally, only one investigation (see [109]) used an objective measure of pain interference (i.e., number of missed work hours in the previous month), while most investigations relied on self-report.

Acculturation

Acculturation is defined as the process of adopting the behaviors, beliefs, and cultural elements of the dominant group in a society.[82] In non-pain investigations, studies have demonstrated that increases in acculturation are associated with increases in health-promotion behaviors (e.g., preventative screens and contraceptive use) as well as decreases in physical health and emotional well-being.[51]

Three pain investigations yielded inconsistent results regarding the role of acculturation in the pain experience of HAs. Riley et al.[114] used language preference, nativity, and a cultural identification measure to examine acculturation in Hispanics with orofacial pain. More

acculturation was associated with less pain intensity and fewer problems with physical and emotional functioning. Conversely, Jimenez et al.[74] used language preference to measure acculturation in Hispanic older adults. Although Spanish- and English-speaking HAs reported similar pain levels, Spanish-speaking HAs reported fewer functional limitations due to pain. Using self-reported English proficiency, nativity, and generational status to measure acculturation in Hispanics, Bui et al.[20] found that greater levels of acculturation were associated with more reports of chronic back or neck pain. Given the different measures of acculturation employed, it is difficult to generalize across study findings. Future investigations should consider using Hispanic-specific measures of acculturation (e.g., the Biculturalism/Multiculturalism Experience Inventory,[112] the Short Acculturation Scale for Hispanics,[91] and the Acculturation Rating Scale for Mexican Americans[35]) to better understand acculturation in the context of pain in HAs.

Religious attributions for pain

In traditional Hispanic cultures, pain and illness are viewed as disharmony with or punishment from God.[80] This theme emerged during interviews with MAs living with chronic pain – pain was discussed as a loss of spiritual connectedness or as conflict with God, while God was also viewed as the provider of help from pain.[132] Given that certain types of religious coping are associated with more pain sensitivity,[6,115] additional research is needed to examine the extent to which these beliefs play a role in the pain experience of HAs.

Pain from occupational hazards

Compared to other racial/ethnic groups, HAs disproportionately work in blue-collar and manual labor occupations with greater safety risks that expose them to pain.[5,73,131] Consistent with this exposure, HAs report more occupational pain and injury than NHWs. [36,129] Numerous investigations have found that acute and chronic pain is a common complaint among HA workers employed in agriculture,[8,19,60,88,110,117,121,135] construction,[5,21,52] and the service industry.[48,52,56] Furthermore, a survey of 300 HA farmworkers with musculoskeletal pain found that 28% were above the CES-D clinical cut point for depression.[121] Among HAs working in manual labor and agricultural occupations, awkward posture and repetitive movements predicted higher rates of low back pain.[60]

Future research directions

Although HAs report greater pain severity (clinical) and sensitivity (experimental), are at greater risk for developing pain conditions due to occupational hazards, and have less access to healthcare, HAs report fewer pain conditions in national surveys relative to NHWs. Future investigations should work to elucidate possible reasons for these seemingly contradictory findings. One area of focus should be HAs' cultural beliefs and attitudes that serve as protective factors in the development of pain conditions. For instance, previous investigations have found that increased levels of social support, mental health, and work satisfaction serve as protective factors in the development of chronic pain for the general population.[10,96] These factors parallel the Hispanic culture's emphasis on family and work values and may play key roles in protecting HAs against the development of chronic pain.[49] Furthermore, research has found that children are more likely to develop chronic pain if a

parent or sibling has chronic pain.[97] HAs may be exposed to fewer familial pain models [41] or be less susceptible to the effects of these models,[13] which could lower their risk of developing pain conditions. Finally, the HA population is younger (median age 28 years) than NHWs (median age 42 years) and NHBs (median age 33 years).[104] Given that pain, particularly chronic pain, conditions are more common among older adults,[63,79,109,126] age could partially account for the observed ethnic differences in pain prevalence.

Response to Pain

Pain coping

Pain coping includes any response that seeks to diminish the physical, emotional, and psychological effects of pain.[23] Campbell et al.[23] reviewed the coping methods used by Hispanics experiencing malignant and non-malignant pain. The current review will highlight a few of the most common coping methods used by HAs; namely, stoicism, religious coping, and catastrophizing.

One way HAs cope with pain is by remaining stoic. Stoicism is defined as submitting to "one's fate" and suffering in this world without complaint, while bearing pain with dignity and courage.[22] Stoicism is often learned from the family[23] and is used as an attempt to maintain the same or a similar level of functioning.[118,132] The use of stoicism is associated with not appearing "wimpy" or dependent, while complaining of pain and not fulfilling one's social duties is associated with weakness.[123,132] Although this coping method is particularly characteristic of HA men, HA women also report using stoicism to cope with pain.[123,132] To our knowledge, no study has examined the relationship between stoicism and pain outcomes among HAs.

As previously discussed, many HAs view pain as disharmony with or punishment from God (see "Religious attributions for pain"). Therefore, it is unsurprising that numerous investigations have found that HAs often endorse using religious coping methods, such as prayer, to manage pain. Compared to NHWs, HAs report using more religious coping for experimental pain[65] and clinical pain;[30,42,50,77,130] HAs and NHBs report similar use of religious coping.[30,42,50,65,130] Compared to NHWs with acute pain, a greater proportion of HAs report talking about their pain with a minister, pastor, or someone else at their place of worship and report praying to God that the pain would go away.[30] HAs with arthritis reported visiting a parish nurse or clergy/deacon/priest as part of their pain management strategy[27] and using God and prayer to help overcome their pain.[2] A qualitative investigation found HAs report using religious coping in order to understand and tolerate their pain.[123]

The relationship between religious coping and pain outcomes in HAs has been examined in two investigations using the Prayer/Hoping subscale of the Coping Strategies Questionnaire (CSQ). Abraído-Lanza et al. found that more frequent use of prayer/hoping was associated with greater psychological well-being.[4] Edwards et al. found that greater use of prayer was associated with greater pain sensitivity and disability but was not related to reported distress and affective pain (i.e., describing pain as tiring-exhausting, sickening, fearful, and punishing-cruel).[42] Based on these limited findings, it appears that religious coping is

associated with both positive and negative pain outcomes for HAs, which is consistent with the broader literature on religious coping.[6,115]

Catastrophizing – exaggerated negative cognitions that occur during an anticipated or actual painful experience – has been associated with poorer pain adjustment.[127,134] Two investigations using the Catastrophizing subscale of the CSQ found that HAs with chronic pain used catastrophizing as a coping method more than NHWs.[42,50] In separate racial/ethnic models, catastrophizing predicted greater psychological distress and greater affective pain for HA, NHW, and NHB chronic pain patients; however, the relationship between catastrophizing and pain severity was significant for only NHB and NHW patients but not for HA patients.[42] This finding suggests that HAs frequently use catastrophizing to cope with pain, but that the effects of catastrophizing on pain outcomes may differ for HAs compared to NHWs and NHBs.

Nonprescription pain management (including cultural remedies)

There is some evidence to suggest HAs use different nonprescription analgesic medications to manage their pain. Three investigations found HAs were more likely to report trying over-the-counter medications for acute or chronic pain compared to NHB and NHW respondents;[24,43,130] although, one national survey found the opposite pattern of results in respondents with chronic pain.[109] In a telephone survey of healthy college students, HA and NHW respondents were more likely to endorse using self-care techniques (e.g., over-the-counter medications and applying heat or ice) for pain than were NHB respondents.[65]

Some HAs receive pain management outside of the U.S. For instance, the majority of Mexican immigrant farm workers reported that they rarely use health services in the U.S. and that they last received healthcare in Mexico.[8,88] Another investigation found that HAs primarily obtained dental pain care in their native country and only sought a U.S. dentist as a last resort.[31] Approximately one-third of HAs in a focus group reported buying or having someone else buy medicines in another country to bring back to the U.S. for their use.[125] The most common items purchased outside of the U.S. were antibiotics (14%), pain medications (12%), vitamins (12%), and herbal medicines (9%).[125] HAs reported seeking healthcare outside of the country due to the costs of healthcare and prescription medications in the U.S. and because they are more comfortable using the same medications they or their family have used previously.[125]

In focus group and qualitative studies, some HAs reported off-label medication use and buying medications outside of pharmacies to treat their pain. HAs reported treating their pain with antibiotics[83] and Metamizole (i.e., dipryrone), a non-steroidal anti-inflammatory agent that has been banned in the U.S. since 1979.[15,53] During focus groups, HAs reported buying antibiotics and other pain medications without a prescription from *bodegas* or *tiendos* (i.e., markets);[31,83,125] HAs without health insurance were particularly likely to make such purchases.[125] In interviews, HAs reported that they preferred purchasing from these markets because it did not require waiting in a clinic, which was identified as a major deterrent to seeking pain treatment.[83] HAs also discussed obtaining antibiotics and Metamizole from family members and their native country.[15,83] In most Latin and Central American countries,

these medications are less expensive than in the U.S. and are available without a prescription.[15,83]

HAs also use cultural remedies to relieve their pain. HAs seek out cultural remedies from individuals visiting their native country, from people still living abroad, or by obtaining them from local markets.[31,132] HAs with chronic pain reported using analgesics, as recommended by their health care providers, as well as treatments recommended by community members.[118] HAs and MAs with acute and chronic pain reported that massage, warm touch, teas, herbs, spices, ointments, warm towels/compresses, and heat were particularly beneficial in relieving chronic pain.[118,123,132] HAs with acute postsurgical pain reported that medications were the most effective strategy to reduce pain but that herbs and teas helped to calm their nerves and that herbs helped heal the site of incision.[123] One HA patient in that investigation shared the following cultural remedy: “Some elderly women told me to use some warm towels and drink warm tea to take good care of myself. It is too cold inside you and the warm towels warm you up.”[123]

“Hot and cold” theory of disease

Hispanic cultural remedies for pain are often influenced by the “hot and cold” theory of disease. This theory posits that disease is caused by an imbalance of the four humors (i.e., blood, phlegm, black bile, and yellow bile), and the use of hot or cold can help restore balance in the body.[23,29,80] This theory appears to play a significant role in Hispanic cultural remedies, as many of these treatments are used to achieve a balance of hot and cold.[132] Pain is considered a cold disease, which requires treatment with hot foods and medicines.[80,132] Providers should consider this information when making treatment recommendations, for example, by asking patients about the acceptability of certain treatments that may run counter to this theory (e.g., ice). However, it is important to keep in mind that not all Hispanics and HAs subscribe to this theory of disease; these beliefs are particularly prominent among Hispanics with less formal education and less acculturation and may vary based on country of origin.(pg. 23,[29])

Upholding social roles

Cultural values regarding work and family play a large role in HAs’ pain behaviors. MA men reported enduring pain in order to support and provide for their family; whereas MA women reported enduring pain in order to care for and nurture their family.[132] HAs also reported a strong sense of pride associated with working in and outside of the home despite experiencing pain.[132] HA women reported it was important for them to complete housework, no matter how minimal, in order to avoid feeling “useless” and “incompetent”;[3] HA men reported a loss of masculinity if they could no longer work because of their chronic pain.[9] HA mothers with arthritis reported that concerns about their children’s futures inspired them to face pain with courage.[2] Among MAs interviewed for an ethnographic study, not fulfilling one’s social roles was attributed to individual weakness and perceived to lead to social ridicule and scorn.[132]

Future research directions

More research is needed on culturally based beliefs and attitudes that influence HAs' pain behaviors. For instance, it is unclear whether and how level of acculturation and language barriers influence HAs' treatment seeking and use of cultural remedies for pain. HAs are more likely than other racial/ethnic groups to express fatalistic attitudes (the belief that one's fate cannot be changed and is beyond one's control).[1] These attitudes have been shown to predict poorer communication with healthcare providers and may impede treatment seeking.[1,128] Compared to NHWs, HAs have higher rates of somatization (emotional distress that produces somatic signs of pain or illness),[42,108] which has been shown to predict chronic pain development in the general population.[95] Furthermore, HAs could be strongly influenced by their cultural attitudes towards work. The importance placed on work likely influences HAs' decisions to return to work despite pain, as well as their rates of disability.

Seeking Pain Treatment and Pain Management

Although presented in Figure 1 as two separate domains, many of the factors that influence HAs' decisions to seek pain treatment also influence their pain management experience. Thus, the following section will span both of these domains and the micro- and macro-level variables of influence.

Access to care and Barriers to accessing pain care

Compared to NHWs, Blacks, Asians, and American Indians/Alaskan Natives, HAs represent the largest proportion of individuals living in poverty and have the lowest rates of having health insurance.[18] In 2009, 36% of HAs were uninsured, compared to 17.5% for the general population.[73] Although the number of uninsured HAs declined to 23% after the Affordable Care Act's first open-enrollment period, insurance coverage remains a significant issue for this ethnic group.[38] Compared to NHW respondents, a greater proportion of HAs report difficulty obtaining health care, delaying or not seeking healthcare, and financial barriers that prevent them from seeing a doctor or filling a prescription medication.[61] More than half of HAs surveyed agreed that the cost of medical care is a major problem facing the average HA.[86]

Numerous pain investigations have found that, compared to NHWs, HAs are less likely to have consulted a physician for acute[43] or chronic pain.[30,64,87,101,109] One national survey found that Hispanic ethnicity and speaking Spanish as one's primary language were significant predictors of lower access to chronic pain treatment.[101] Delaying pain treatment is problematic for many reasons; among them is the fact that untreated acute pain can lead to chronic pain and disability.[47] This finding may be part of the reason why HAs have the lowest rate of short-term work loss (1–2 days) but the highest rate of long-term work loss (31+ days).[37]

Overall, HAs face numerous barriers to seeking and receiving pain care, including financial constraints, lack of insurance, language barriers, and immigration status. Financial barriers often limit HAs' ability to obtain health insurance and pay for care. One qualitative study

found the most common reason for MAs to not enroll in a health insurance plan was the monthly premium.[56] Compared to NHWs, HAs are also more likely to report that financial concerns prevent them from seeking pain treatment.[101,136] During qualitative interviews, HAs discussed that treating pain often requires missing a day of paid work, paying for the hospital visit, and paying for medications, which leaves less money for housing, food, and transportation.[31,136]

As a quarter of HAs live in exclusively Spanish-speaking households,[73] it is not surprising that language has also been identified as a barrier to pain management.[31,101] Compared to NHW and NHB respondents with chronic pain, HAs were significantly more likely to agree with the statement, "Since I do not speak English well, it is hard for me to get treatment for my pain."[101] Two investigations found that Spanish-speaking HAs are less likely to have consulted a health care provider for their pain compared to English-speaking HAs.[101,114] Specifically, Spanish-speaking HAs report difficulties describing their pain experience and problems understanding clinical recommendations from non-Spanish speaking healthcare providers.[31,123]

Immigration status is another potential barrier to seeking and receiving pain care. It is estimated that 50.7 million of all Hispanics living in the U.S. are immigrants and 6.5 million are undocumented (i.e., individuals who came to the U.S. without proper legal documentation or have overstayed valid tourist, student, or other visas).[67,105] Many Hispanic immigrants, regardless of documentation status, fear that accessing healthcare could force them to disclose their own immigrant status or that of a household member.[62] Two pain-related investigations elicited the perspectives of Hispanic immigrants about their healthcare experiences. In both investigations, documented and undocumented HAs reported fears that disclosing personal information to obtain health insurance or receive pain care would be reported to the Immigration and Customs Enforcement Office.[8,62] Fears of deportation were associated with increased stress and depression, as well as missing healthcare appointments when immigration law enforcement or police were nearby.[62] It is important to highlight the paucity of pain-related research with undocumented Hispanic immigrants, which is likely due in part to individuals' deportation concerns.

Acculturation

Outside of the pain literature, increased levels of acculturation to U.S. society are associated with poor health behaviors (e.g., more smoking, poor nutrition and diet, and more drinking and drug use) among HAs; however, more acculturation is also associated with having health insurance and access to healthcare, in general.[82] This association also applies to pain care specifically, as one investigation found that less acculturation was associated with less access to pain care.[114] On the other hand, a qualitative investigation found no substantial differences in the pain care experiences of MAs with high and low levels of acculturation.[132] These limited findings suggest that, although acculturation may be an important factor in HAs' access to general and pain-specific healthcare, more research is needed to better understand these relationships and the extent to which they contribute to ethnic disparities in pain.

Occupational barriers

Although HAs are at greater risk for developing pain from occupational exposure, HAs are less likely to receive employment-based health insurance than other racial/ethnic groups.[18] Nearly 30% of HAs work for an employer who does not offer health insurance.[73] One survey of HA dairy workers found that less than 3% of workers reported having health insurance, and none had dental insurance.[8] In addition, HAs are more often employed in occupations that do not allow for flexible schedules or offer paid sick-leave.[57] These occupational barriers limit HAs' access to pain care, particularly nonpharmacological treatments that require multiple appointments, such as physical therapy.

Treatment preference and Cultural stigma towards strong pain medications

Numerous investigations have found that HAs are hesitant to take strong pain medications (e.g., opioid medications).[77,99,101,109,118,123] This reluctance appears to be driven, in part, by cultural beliefs. For example, MAs with chronic pain reported that they believed that pain should be overcome without medication and that medication is only acceptable when it is "absolutely necessary," such as when pain interferes with one's ability to perform social roles or work.[99] Negative attitudes toward pain medications are also related to fears of adverse treatment outcomes.[77] While such negative attitudes about strong pain medications are not unique to HAs, one investigation found that, compared to NHWs, HAs reported more fear of negative treatment outcomes and this fear inhibited them from seeking pain care.[77] Furthermore, HAs with chronic pain reported significantly more fears of combining pain medications and greater concerns about becoming addicted to pain medications compared to NHWs.[101,109] Concerns about addiction and building a tolerance to pain medications, particularly opioids, were discussed by HAs in several qualitative studies.[99,118,123] Even HAs with acute pain reported avoiding strong medications because of addiction and tolerance concerns – even though the majority of patients agreed that medication was the most effective pain relief strategy and were currently being treated with pain medications.[123] This finding suggests that HA patients are often conflicted about pain medications. On the one hand, their culturally-based beliefs and concerns deter pain medication use; whereas on the other hand, they acknowledge the analgesic benefits of these medications, particularly for acute pain.

Perceived discrimination

HAs express some negative attitudes about their interactions with healthcare providers. One survey found, compared to NHWs, HAs with chronic pain were significantly more likely to endorse that health professionals do not understand their pain and do not believe them when they say they are in pain.[101] The perception that healthcare providers did not care about their pain was a prominent theme during interviews with HAs with acute postsurgical pain.[123] Some participants reported that their providers did not believe they were experiencing severe pain, that they did not receive pain medication while hospitalized, and that they had to ask for prescription pain medication after discharge; participants were especially dissatisfied with their care if they felt providers gave too little attention to their pain.[123] MA women in a fibromyalgia support group reported that receiving a prescription for pain medication was equivalent to being "brushed off" by the provider, as they preferred to focus on the

underlying cause of the pain rather than receive a prescription to manage their symptoms.[99] Another investigation found that, compared to those with higher levels of acculturation, MAs with lower levels of acculturation more often reported that perceived discrimination by providers was a barrier to utilizing healthcare services for pain.[132] Although rich in content, most of this literature is based on qualitative interviews, which provides little indication of the prevalence of perceived discrimination experienced by HA patients. Future investigations are needed to quantify these attitudes and determine the extent to which perceived discrimination is a barrier to seeking and receiving pain care among HA patients.

Access to Spanish-language translators and pain assessment tools

Spanish-language interpreters and materials can help overcome language barriers and have been shown to result in better pain care. Spanish-speaking HA patients have expressed difficulty in describing their pain experience to their mostly English-speaking healthcare providers; they also reported difficulty finding pain management materials in Spanish.[31,123] One investigation found that Spanish-speaking HA patients who received pain care alongside a trained interpreter reported better pain control and characterized their providers as being more responsive and helpful than did Spanish-speaking patients without access to an interpreter. However, only 27% of patients in this investigation reported having access to an interpreter every time they were in the hospital.[75] Absent translators or fluent providers, Spanish-speaking HAs often rely on friends and family to communicate with providers,[28] which compromises confidentiality and may limit open communication between patient and provider.

Future research directions

There are a number of unanswered questions about the pain management experiences of HAs. A number of understudied variables of interest are shown in Figure 1. First, information on the attitudes or factors that facilitate HAs seeking pain care, despite barriers, should be investigated. Identifying these factors will inform providers, clinics, and policy on how to ensure HAs receive pain care. Second, little is known about HAs' willingness to engage in nonpharmacological treatments for pain, such as physical therapy and mental health counseling. One non-pain survey of primary care patients with a depressive disorder found HAs were less likely to find antidepressant medications acceptable but more likely to find counseling acceptable relative to NHWs.[32] It is unknown whether these attitudes generalize to nonpharmacological treatments for pain. Third, the influence of HAs' education and socioeconomic status has received little attention in the pain literature. This lack of attention is noteworthy, as most HAs, particularly MAs, are disproportionally represented among individuals without a high school diploma.[51,92] This finding also suggests HAs are at elevated risk for low levels of health literacy, defined as a patient's ability to understand health information and make informed health care decisions.[66] HAs' pain treatment seeking and pain care decisions could be based, in part, on misinformation or being unaware of pain management options.

Healthcare Providers' Experience

Healthcare providers play an important role in HAs' pain management experiences. This section identifies the psychological and systems-level factors that influence healthcare providers' decisions for HAs with pain. This information provides an important first-step in improving care for HA patients and reducing pain treatment disparities.

Beliefs about HAs' pain experiences and Spanish fluency

Only a few investigations have examined providers' knowledge and attitudes about HA patients with pain. Healthcare providers in a qualitative investigation reported that HA patients are frequently concerned about the side effects of pain medications and about theft if others knew they had opioid medications in the home.[69] A survey study found that providers who were licensed to prescribe opioid medications rated financial barriers, concerns about addiction, and education level as having the largest influence on opioid medication compliance among HA patients.[28] Nurses in another study described their PRA chronic pain patients' verbal and behavioral pain expressions as "inappropriate."[9] This finding suggests a cultural mismatch between providers and patients, as such behavioral (e.g., wincing and grimacing) and vocal (e.g., moaning and crying out) expressions of pain are accepted as legitimate coping strategies in many Hispanic communities and are not necessarily indicators of severe pain or treatment seeking.[22]

One investigation examined providers' perceptions of how cultural beliefs influence the pain management decisions of HA patients. Pain providers (e.g., physicians, nurses, and therapists) reported that patients' use of prayer as a treatment, spiritual beliefs and faith, and family relationships were particularly important cultural beliefs that influence HAs' pain management decisions.[28] This investigation also found that less than 20% of providers reported being proficient in Spanish writing, listening, and speaking. Compared to providers with little or no Spanish fluency, providers fluent in Spanish were more likely to rate cultural beliefs as having a stronger influence on HAs' pain management decisions. Furthermore, providers fluent in Spanish reported fewer problems obtaining medical histories from and educating HA patients about pain than did less fluent providers.[28] These findings suggest that providers hold beliefs about HA patients' treatment preferences and the influence of culture on their pain experience and management. These beliefs may have important implications for how providers assess and treat pain in the HA population.

Availability of Spanish-language translators, tools, and materials

As previously discussed, Spanish-speaking HA patients report difficulty describing their pain experiences to providers and report better pain control when a Spanish-language translator is present.[75,123] Unfortunately, Spanish-language interpreters, pain assessment tools, and education materials are frequently unavailable. An online survey of pain providers found 60% relied on patients' friends or relatives to translate, 58% reported using trained in-person medical interpreters, 49% used a trained interpreter via telephone, and 10% relied on visual aids.[28] This survey also found that 80% of providers reported that their clinical practice had Spanish-language patient education literature, 64% had Spanish-language consent forms, and only 44% had Spanish-language medical history questionnaires.[28]

Future research directions

There is limited information about providers' experiences with HA pain patients. One future research direction is to examine whether and how providers' demographic characteristics (e.g., gender and race/ethnicity) play a role in HA patients' satisfaction with their pain care. In particular, it would be interesting to examine the pain care (process and outcome) delivered by providers who share the same ethnicity as their HA patients, and contrast it with the care delivered by non-Hispanic providers. Non-pain surveys found that HA respondents reported greater healthcare satisfaction with HA providers,[119] and HA patients considered providers' Hispanic ethnicity and Spanish fluency when selecting a provider.[120] Due to the subjective nature of pain complaints, providers' demographic characteristics and language fluency may play a larger role in the pain care of HAs than other racial/ethnic minorities. Research should also investigate the extent to which providers' beliefs and attitudes towards HAs influences their pain care decisions, especially considering that HAs are at risk for receiving poorer pain can relative to NHWs.[94] One investigation found that providers expressed an implicit preference for NHWs relative to HAs;[12] however, it is unknown if this ethnic bias influences providers' comfort-level and interactions with HA patients or their pain care decisions.

Limitations

Several limitations of this review should be noted. Despite our comprehensive search methods, we may have failed to include some studies, which could lead to an incomplete representation of the existing literature. Due to limited study sampling of non-English speaking HAs, undocumented Hispanic immigrants, and HAs who do not utilize U.S. healthcare, the conclusions of this review may not generalize to these groups. In addition, we fully acknowledge the heterogeneity of the HA population; unfortunately, the scant research base only allows for a broad overview at this time. Although all aspects of our conceptual model may not generalize to every HA subgroup, we hope this review serves as a starting point for better understanding the pain experience of this burgeoning ethnic group and its various subgroups. For instance, CAs tend to have a higher socioeconomic status than MAs or PRAs,[100] which could help them overcome the numerous barriers to accessing pain care. Future research should examine whether individual differences, such as country of origin, influence HAs' pain experience, response, and care.

Several limitations of our conceptual model should also be noted. One factor missing from our model is pain treatment outcomes. This omission is due to the paucity of literature on pain outcomes among HAs. This gap should be addressed in order to optimize HA patients' clinical outcomes and satisfaction with care. For example, the prior pain management experiences of HA patients and their providers might influence current treatment outcomes, which then might influence HAs' future experiences and responses to pain. Additionally, other factors included in the model might be interrelated. For example, acculturation could influence treatment preference, which then influences decisions about seeking pain care. Because these and other associations have not been examined to date, our model likely represents a somewhat simplified version of the pain experience of HAs.

Summary and clinical implications

In this paper, we critically reviewed the existing literature on the pain experience and management of HAs and proposed a conceptual model in order to identify future areas of research (Figure 1). The following serves as a summary for each major section of the figure:

Experience of pain

Overall, HAs report fewer pain conditions, fewer pain comorbidities, and less pain interference than NHWs. These differences are striking given that, compared to NHWs, HAs report more pain severity and sensitivity in clinical and experimental pain studies, and HAs are more likely to work in occupations that predispose them to pain. Future investigations should elucidate the individual (e.g., age, work satisfaction) and sociocultural (e.g., social support, collectivist culture, and familial pain models) reasons for these seemingly contradictory findings.

Response to pain

HAs are more likely than NHWs to report using religious coping and catastrophizing in response to pain. For the management of pain, HAs report frequently seeking pain care outside of the U.S., using off-label medications, and using “hot” treatments (e.g., teas, herbs, massage) consistent with the “hot and cold” theory of disease. Future investigations should examine the role of acculturation and language in shaping HAs’ pain coping and treatment use, as well as examine the influence of culturally based attitudes (e.g., fatalism and cultural attitudes towards work) and somatization on their response to pain.

Seeking pain treatment

Hispanic ethnicity, speaking Spanish as a primary language, and lower levels of acculturation were found to be significant predictors of lower access to pain care. HAs face numerous barriers to pain care, including financial constraints, lack of insurance, language fluency, immigration status, and being employed in occupations with limited or no sick leave. Future investigations should examine additional predictors of lower access to pain care, such as socioeconomic status, as well as predictors that facilitate HAs seeking pain care.

Pain management

HAs reported concerns about taking strong pain medications, such as opioids, and the cultural belief that pain “should be” overcome without medications. In qualitative interviews, HA patients reported negative interactions with healthcare providers and dissatisfaction with their pain care; this was especially true among patients for whom Spanish was their primary language. Future investigations should examine patients’ pain-related health literacy, as well as their comfort with healthcare providers and pain treatment plans, in order to ensure that HAs receive adequate and culturally-sensitive pain care.

Healthcare providers' experience

Healthcare providers reported that many HA patients are concerned about opioid medications and are influenced by cultural beliefs when seeking pain care. Compared to non-fluent providers, Spanish-speaking providers reported fewer problems interacting with HA patients and that cultural beliefs had a greater influence on patients' pain management decisions. Providers expressed concern that clinics had a limited number of trained interpreters and Spanish-language materials. Consequently, they frequently rely on patients' friends and relatives to translate, which compromises confidentiality. Future investigations should examine additional beliefs and attitudes that providers have about HAs and determine the extent to which they influence providers' pain management decisions. Investigations should also examine the relationship between providers' demographic characteristics (e.g., race/ethnicity) and HAs' satisfaction with pain care.

The following clinical recommendations should be considered to improve pain care for HAs. First, given the large percentage of HAs who face language barriers, trained Spanish-speaking interpreters should be readily available in clinical settings that are utilized by HA patients. Trained interpreters are preferred by both providers and Spanish-speaking patients[81] and have been shown to improve clinical care for patients with language barriers.[76] Second, providers should not assume that HA patients have the health literacy and access to suitable information resources that are necessary for the receipt of quality healthcare. Providers should be especially vigilant in explaining the pain condition and treatment options and assessing patients' understanding and acceptability of this information; this may be especially true when considering opioid medications, given the fears of addiction and tolerance that appear to be prevalent in Hispanic culture. While this clinical approach may require a greater time investment upfront, assessing patients' level of understanding leads to more reliable information gathering and increases patients' treatment adherence and response.[103] Finally, providers should inquire about HA patients' use of cultural remedies and any off-label medication for pain. Providers do not often ask about these treatments, and many HAs report not disclosing them to providers.[70,78] This information is critical, however, in that it allows providers to consider potentially harmful or fatal drug interactions, as well as the opportunity to educate patients about the risks of using off-label and illegally obtained medications.[16,124] Assessing patients' use of cultural remedies can also enhance the provision of culturally competent care and foster trust between patients and providers.[16]

Although the aforementioned clinical recommendations are discussed separately, they are unified by a common theme of providing culturally competent pain care to HA patients. The goal of culturally competent care is to incorporate the cultural beliefs and practices of individuals, families, and populations into pain care.[39] It also includes providers being aware of the potential influence of their own cultural backgrounds and biases when making pain care decisions.[72] Implementing culturally competent care into practice will likely improve HA patient and provider satisfaction and reduce racial/ethnic pain care disparities.[16]

Terminology

HA	Hispanic American
NHW	Non-Hispanic White
NHB	Non-Hispanic Black
MA	Mexican American
CA	Cuban American
PRA	Puerto Rican American

References

1. Abraído-Lanza AE, Viladrich A, Flórez KR, Céspedes A, Aguirre AN, De La Cruz AA. Commentary: fatalismo reconsidered: a cautionary note for health-related research and practice with Latino populations. Ethn Dis. 2007; 17:153–8. [PubMed: 17274225]
2. Abraído-Lanza AF, Revenson TA. Coping and social support resources among Latinas with arthritis. Arthritis Care Res (Hoboken). 1996; 9:501–8.
3. Abraído-Lanza AF. Latinas with arthritis: effects of illness, role identity, and competence on psychological well-being. Am J Community Psychol. 1997; 25:601–27. [PubMed: 9485576]
4. Abraído-Lanza AF. Social support and psychological adjustment among Latinas with arthritis: a test of a theoretical model. Ann Behav Med. 2004; 27:162–71. [PubMed: 15184092]
5. Anderson J, Hunting K, Welch L. Injury and Employment Patterns Among Hispanic Construction Workers. J Occup Environ Med. 2000; 42:176–86. [PubMed: 10693079]
6. Anderson KO, Green CR, Payne R. Racial and Ethnic Disparities in Pain: Causes and Consequences of Unequal Care. J Pain. 2009; 10:1187–204. [PubMed: 19944378]
7. Bair MJ, Robinson RL, Katon W, Kroenke K. Depression and pain comorbidity: a literature review. Arch Intern Med American Medical Association. 2003; 163:2433–45.
8. Baker D, Chappelle D. Health status and needs of Latino dairy farmworkers in Vermont. J Agromedicine Taylor & Francis. 2012; 17:277–87.
9. Bates M, Edwards W. Ethnic variations in the chronic pain experience. Ethn Dis. 1992; 2:63–83. [PubMed: 1458217]
10. Bergman S, Herrstrom P, Jacobsson LT, Petersson IF. Chronic widespread pain: a three year followup of pain distribution and risk factors. J Rheumatol. 2002; 29:818–25. [PubMed: 11950027]
11. Bernstein SL, Gallagher EJ, Cabral L, Bijur P. Race and Ethnicity Do Not Affect Baseline Self-Report of Pain Severity in Patients with Suspected Long-Bone Fractures. Pain Med Jan/Feb 2009. 2009; 10:106–10.
12. Blair IV, Havranek EP, Price DW, Hanratty R, Fairclough DL, Farley T, Hirsh HK, Steiner JF. Assessment of biases against Latinos and African Americans among primary care providers and community members. Am J Public Health. 2013; 103:92–8. [PubMed: 23153155]
13. Boissoneault J, Bunch JR, Robinson M. The roles of ethnicity, sex, and parental pain modeling in rating of experienced and imagined pain events. J Behav Med.
14. Bolen J, Schieb L, Hootman JM, Helmick CG, Theis K, Murphy LB, Langmaid G. Differences in the prevalence and severity of arthritis among racial/ethnic groups in the United States, National Health Interview Survey, 2002, 2003, and 2006. Prev Chronic Dis. 2010; 7:A64. [PubMed: 20394703]
15. Bonkowsky JL, Frazer JK, Buchi KF, Byington CL. Metamizole Use by Latino Immigrants: A Common and Potentially Harmful Home Remedy. Pediatrics. 2002; 109:e98–e98. [PubMed: 12042592]
16. Brach C, Fraserirector I. Can Cultural Competency Reduce Racial and Ethnic Health Disparities? a Review and Conceptual Model. Med Care Res Rev. 2000; 57:181–217. [PubMed: 11092163]

17. Brennan F, Carr D, Cousins M. Pain Management: A Fundamental Human Right. Pain Med. 2007; 105:205–21.
18. Brown ER, Ojeda VD, Wyn R, Levan R. Racial and Ethnic Disparities in Access to Health Insurance and Health Care. UCLA Cent Heal Policy Res. 2000
19. Brumitt J, Reisch R, Krasnoselsky K, Welch A, Rutt R, Garside LI, McKay C. Self-reported musculoskeletal pain in Latino vineyard workers. J Agromedicine. 2011; 16:72–80. [PubMed: 21213166]
20. Bui Q, Doescher M, Takeuchi D, Taylor V. Immigration, acculturation and chronic back and neck problems among Latino-Americans. J Immigr Minor Health. 2011; 13:194–201. [PubMed: 20680453]
21. Caban-Martinez AJ, Lee DJ, Clarke TC, Davila EP, Clark JD, Ocasio MA, Fleming LE. Self-reported joint and back pain among Hispanic construction workers: A pilot workplace musculoskeletal assessment. J Musculoskelet Res. 2010; 13:49–55.
22. Calvillo E, Flaskerud J. Evaluation of the pain response by Mexican American and Anglo American women and their nurses. J Adv Nurs. 1993; 18:451–9. [PubMed: 8450141]
23. Campbell LC, Andrews N, Scipio C, Flores B, Feliu MH, Keefe FJ. Pain coping in Latino populations. J Pain. 2009; 10:1012–9. [PubMed: 19595635]
24. Carey TS, Freburger JK, Holmes GM, Jackman A, Knauer S, Wallace A, Darter J. Race, care seeking, and utilization for chronic back and neck pain: population perspectives. J Pain. 2010; 11:343–50. [PubMed: 19853527]
25. Carlisle S. Nativity Differences in Chronic Health Conditions Between Nationally Representative Samples of Asian American, Latino American, and Afro-Caribbean American Respondents. J Immigr Minor Health. 2012; 14:903–11. [PubMed: 22427109]
26. CDC. MMWR Morb Mortal Wkly Rep. Atlanta, GA: 2005. Racial/ethnic differences in the prevalence and impact of doctor-diagnosed arthritis -- United States, 2002.
27. Cheriel C, Huguet N, Gupta S, McClure H, Leman RF, Ngo DL. Arthritic pain among Latinos: results from a community-based survey. Arthritis Rheum. 2009; 61:1491–6. [PubMed: 19877091]
28. Chiauzzi E, Black RA, Frayjo K, Reznikova M, Grimes Serrano JM, Zacharoff K, Wood M. Health care provider perceptions of pain treatment in Hispanic patients. Pain Pract (PAIN Pract. 2010; 11:267–77. [PubMed: 21070592]
29. Chong, N. The Latino patient: A cultural guide for health care providers. Yarmouth, ME: Intercultural Press; 2002.
30. Cohen LA, Bonito AJ, Akin DR, Manski RJ, Macek MD, Edwards RR, Cornelius LJ. Toothache pain: behavioral impact and self-care strategies. Spec care Dent. 2009; 29:85–95.
31. Cohen LA, Harris SL, Bonito AJ, Manski RJ, Macek MD, Edwards RR, Cornelius LJ. Coping with toothache pain: a qualitative study of low-income persons and minorities. J Public Health Dent. 2007; 67:28–35. [PubMed: 17436976]
32. Cooper L, Gonzales J, Gallo J, Rost K, Meredith L, Rubenstein L, Wang N-Y, Ford D. The Acceptability of Treatment for Depression Among African-American, Hispanic, and White Primary Care Patients. Med Care. 2003; 41:479–89. [PubMed: 12665712]
33. Craig K. The Social Communication Model of Pain. Can Psychol. 2009; 50:22–32.
34. Craven P, Cinar O, Fosnocht D, Carey J, Carey A, Rogers L, Vlasic K, Madsen T. Prospective, 10-year evaluation of the impact of Hispanic ethnicity on pain management practices in the ED. Am J Emerg Med. 2014; 32:1055–9. [PubMed: 25088439]
35. Cuellar I, Harris LC, Jasso R. An acculturation scale for Mexican American normal and clinical populations. Hisp J Behav Sci. 1980; 2:199–217.
36. Department of Health and Human Services. Health conditions among the currently employed: US 1988. Hyattsville, MD: 1993.
37. Dept of Health and Human Services. Worker Health Chartbook, 2004. Cincinnati, OH: 2004.
38. Doty MM, Blumenthal D, Collins SR. The Affordable Care Act and Health Insurance for Latinos. JAMA American Medical Association. 2014; 312:1735–6.
39. Duggleby W. Helping Hispanic/Latino Home Health Patients Manage Their Pain. Clin Concerns. 2003; 21:174–9.

40. Edwards C, Fillingim R, Keefe F. Race, ethnicity and pain. Pain. 2001; 94:133–7. [PubMed: 11690726]
41. Edwards PW, Zeichner A, Kuczmierczyk AR, Boczkowski J. Familial pain models: the relationship between family history of pain and current pain experience. Pain. 1985; 21:379–84. [PubMed: 4000687]
42. Edwards R, Moric M, Husfeldt B, Buvanendran A, Ivankovich O. Ethnic similarities and differences in the chronic pain experience: a comparison of African American, Hispanic, and White patients. Pain Med. 2005; 6:88–98. [PubMed: 15669954]
43. Ell K, Haywood LJ, DeGuzman M, Sobel E, Norris S, Blumfield D, Ning JP, Butts E. Differential perceptions, behaviors, and motivations among African Americans, Latinos, and whites suspected of heart attacks in two hospital populations. J Assoc Acad Minor Phys. 1995; 6:60–9. [PubMed: 7772934]
44. Ennis, S.; Rios-Vargas, M.; Albert, N. 2010 Census Briefs. Washington, DC: 2011. The Hispanic Population: 2010.
45. Escalante A, del Rincon I, Mulrow C. Symptoms of depression and psychological distress among Hispanics with rheumatoid arthritis. Arthritis Care Res (Hoboken). 2000; 13:156–67.
46. Faucett J, Gordon N, Levine J. Differences in postoperative pain severity among four ethnic groups. J Pain Symptom Manage. 1994; 9:383–9. [PubMed: 7963791]
47. Flor, H.; Turk, D. Chronic Pain: An Integrated Biobehavioral Approach. Seattle: IASP Press; 2011.
48. Flores L. Work-related pain in Mexican American custodial workers. Hisp J Behav Sci. 2003; 25
49. Franzini L, Ribble JC, Keddie AM. Understanding the Hispanic paradox. Ethn Dis. 2001; 11:496–518. [PubMed: 11572416]
50. Gagnon CM, Matsuura JT, Smith CC, Stanos SP. Ethnicity and Interdisciplinary Pain Treatment. Pain Pract. 2014; 14:532–40. [PubMed: 23889982]
51. Gallo LC, Penedo FJ, Espinosa de los Monteros K, Arguelles W. Resiliency in the face of disadvantage: do Hispanic cultural characteristics protect health outcomes? J Pers. 2009; 77:1707–46. [PubMed: 19796063]
52. Gany F, Dobslaw R, Ramirez J, Tonda J, Lobach I, Leng J. Mexican urban occupational health in the US: a population at risk. J Community Health. 2011; 36:175–9. [PubMed: 20614170]
53. Garcia S, Canoniero M, Lopes G, Soriano AO. Metamizole Use Among Hispanics in Miami: Report of a Survey Conducted in a Primary Care Setting. South Med J. 2006; 99:924–6. [PubMed: 17004525]
54. Gaskin DJ, Frick KD. Race and ethnic disparities in valuing health. Med Decis Making. 2008; 28:12–20. [PubMed: 18263558]
55. Gatchel RJ, Peng YB, Peters ML, Fuchs PN, Turk DC. The biopsychosocial approach to chronic pain: Scientific advances and future directions. Psychol Bull. 2007; 133:581–624. [PubMed: 17592957]
56. Gleeson S. Leveraging health capital at the workplace: an examination of health reporting behavior among Latino immigrant restaurant workers in the United States. Soc Sci Med. 2012; 75:2291–8. [PubMed: 23017892]
57. Golden L. Flexible Work Schedules Which Workers Get Them? Am Behav Sci. 2001; 44:1157–78.
58. Green CR, Anderson KO, Baker TA, Campbell LC, Decker S, Fillingim RB, Kaloukalani DA, Lasch KE, Myers C, Tait RC, Todd KH, Vallerand AH. The Unequal Burden of Pain: Confronting Racial and Ethnic Disparities in Pain. Pain Med. 2003; 4:277–94. [PubMed: 12974827]
59. Grubert E, Baker TA, McGeever K, Shaw BA. The role of pain in understanding racial/ethnic differences in the frequency of physical activity among older adults. J Aging Health. 2013; 25:405–21. [PubMed: 23271728]
60. Grzywacz JG, Arcury T, Mora D, Al E. Work Organization and Musculoskeletal Health: Clinical Findings From Immigrant Latino Poultry Processing and Other Manual Workers. J Occup Environ Med. 2012; 54:995–1001. [PubMed: 22821071]
61. Haas J, Phillips K, Sonneborn D, McCulloch C, Baker L, Kaplan C, Perez-Stable E, Liang S-Y. Variation in Access to Health Care for Different Racial/Ethnic Groups by the Racial/Ethnic Composition of an Individual's County of Residence. Med Care. 2004; 42:707–14. [PubMed: 15213496]

62. Hacker K, Chu J, Leung C, Marra R, Pirie A, Brahimi M, English M, Beckmann J, Acevedo-Garcia D, Marlin RP. The impact of Immigration and Customs Enforcement on immigrant health: perceptions of immigrants in Everett, Massachusetts, USA. Soc Sci Med. 2011; 73:586–94. [PubMed: 21778008]
63. Hardt J, Jacobsen C, Goldberg J, Nickel R, Buchwald D. Prevalence of chronic pain in a representative sample in the United States. Pain Med. 2008; 9:803–12. [PubMed: 18346058]
64. Hart L, Deyo R, Cherkin D. Physician Office Visits for Low Back Pain: Frequency, Clinical Evaluation, and Treatment Patterns From a U.S. National Survey. Spine (Phila Pa 1976). 1995; 20:11–9. [PubMed: 7709270]
65. Hastie BA, Riley JL, Fillingim RB. Ethnic differences and responses to pain in healthy young adults. Pain Med. 2005; 6:61–71. [PubMed: 15669951]
66. Heinrich C. Health literacy: The sixth vital sign. Am Acad Nurse Pract. 2012; 24:218–23.
67. Hoeffer, M.; Rytina, N.; Baker, B. Unauthorized Immigrant Population Residing in the United States: January 2011. Washington, DC: 2012.
68. Hollingshead N, Vrany E, Stewart J, Hirsh A. Differences in Mexican American's prevalence of chronic pain and co-occurring analgesic medication and substance use relative to Non-Hispanic White and Black Americans: Results from NHANES 1999–2004. Pain Med. In press.
69. Hollingshead NA, Matthias MS, Bair MJ, Hirsh AT. Impact of Race and Sex on Pain Management by Medical Trainees: A Mixed Methods Pilot Study of Decision Making and Awareness of Influence. Pain Med. 2014; 16:280–90. [PubMed: 25039974]
70. Howell L, Kochhar K, Saywell R, Zollinger T, Koehler J, Mandzuk C, Sutton B, Sevilla-Martir J, Allen D. Use of Herbal Remedies by Hispanic Patients: Do They Inform Their Physician? J Am Board Fam Med. 2006; 19:566–78. [PubMed: 17090790]
71. Huang ES, Brown SES, Thakur N, Carlisle L, Foley E, Ewigman B, Meltzer DO. Racial/ethnic differences in concerns about current and future medications among patients with type 2 diabetes. Diabetes Care. 2009; 32:311–6. [PubMed: 19017766]
72. Institute of Medicine. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. Washington, DC: The National Academies Press; 2011.
73. Smedley, B.; Stith, A.; Nelson, A., editors. Institute of Medicine. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care (with CD). Washington, DC: National Academies Press; 2009.
74. Jimenez N, Dansie E, Buchwald D, Goldberg J. Pain among older Hispanics in the United States: is acculturation associated with pain? Pain Med. 2013; 14:1134–9. [PubMed: 23718576]
75. Jimenez N, Moreno G, Leng M, Buchwald D, Morales LS. Patient-reported quality of pain treatment and use of interpreters in spanish-speaking patients hospitalized for obstetric and gynecological care. J Gen Intern Med. 2012; 27:1602–8. [PubMed: 22782281]
76. Karliner LS, Jacobs EA, Chen AH, Mutha S. Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature. Health Serv Res. 2007; 42:727–54. [PubMed: 17362215]
77. Katz JN, Lyons N, Wolff LS, Silverman J, Emrani P, Holt HL, Corbett KL, Escalante A, Losina E. Medical decision-making among Hispanics and non-Hispanic Whites with chronic back and knee pain: a qualitative study. BMC Musculoskelet Disord. 2011; 12:78–86. [PubMed: 21510880]
78. Kennedy J, Wang C-C, Wu C-H. Patient Disclosure about Herb and Supplement Use among Adults in the US. Evid Based Complement Alternat Med. 2008; 5:451–6. [PubMed: 18955213]
79. Knox JB, Orchowski JR, Owens B. Racial differences in the incidence of acute low back pain in United States military service members. Spine (Phila Pa 1976). 2012; 37:1688–92. [PubMed: 22460922]
80. Kosko DA, Flaskerud JH. Mexican American, nurse practitioner, and lay control group beliefs about cause and treatment of chest pain. Nurs Res. 1987; 36:226–31. [PubMed: 3648696]
81. Kuo D, Fagan MJ. Satisfaction with methods of spanish interpretation in an ambulatory care clinic. J Gen Intern Med. 1999; 14:547–50. [PubMed: 10491243]
82. Lara M, Gamboa C, Kahramanian MI, Morales LS, Bautista DEH. Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. Annu Rev Public Health Annual Reviews. 2005; 26:367–97.

83. Larson E, Dilone J, Garcia M, Smolowitz J. Factors Which Influence Latino Community Members to Self-Prescribe Antibiotics. Nurs Res. 2006; 55:94–102. [PubMed: 16601621]
84. Lawlis GF, Achterberg J, Kenner L, Kopetz K. Ethnic and Sex Differences in Response to Clinical and Induced Pain in Chronic Spinal Pain Patients. Spine (Phila Pa 1976). 1984; 9:751–4. [PubMed: 6505845]
85. Lee WW, Burelbach AE, Fosnocht D. Hispanic and non-Hispanic white patient pain management expectations. Am J Emerg Med. 2001; 19:549–50. [PubMed: 11698999]
86. Lillie-Blanton M, Brodie M, Rowland D, Altman D, McIntosh M. Race, Ethnicity, and the Health Care System: Public Perceptions and Experiences. Med Care Res Rev. 2000; 57:218–35. [PubMed: 11092164]
87. Lipton JA, Marbach JJ. Ethnicity and the pain experience. Soc Sci Med. 1984; 19:1279–98. [PubMed: 6531706]
88. Luque JS, Reyes-Ortiz C, Marella P, Bowers A, Panchal V, Anderson L, Charles S. Mobile farm clinic outreach to address health conditions among Latino migrant farmworkers in Georgia. J Agromedicine. 2012; 17:386–97. [PubMed: 22994640]
89. Magni G, Rigatti-Luchini S, Fracca F, Merskey H. Suicidality in chronic abdominal pain: an analysis of the Hispanic Health and Nutrition Examination Survey (HHANES). Pain. 1998; 76:137–44. [PubMed: 9696466]
90. Magni G, Rossi MR, Rigatti-Luchini S, Merskey H. Chronic abdominal pain and depression. Epidemiologie findings in the United States. Hispanic health and nutrition examination survey. Pain. 1992; 49:77–85. [PubMed: 1594284]
91. Marin G, Sabogal F, Marin BV, Otero-Sabogal R, Perez-Stable EJ. Development of a Short Acculturation Scale for Hispanics. Hisp J Behav Sci. 1987; 9:183–205.
92. Marotta SA, Garcia JG. Latinos in the United States in 2000. Hisp J Behav Sci. 2003; 25:13–34.
93. McDonald DD, Ambrose M, Morey B. Hispanic Inpatient Pain Intensity. West J Nurs Res. 2014:1–10.
94. Meghani SH, Byun E, Gallagher RM. Time to take stock: a meta-analysis and systematic review of analgesic treatment disparities for pain in the United States. Pain Med. 2012; 13:150–74. [PubMed: 22239747]
95. Melloh M, Elfering A, Stanton TR, Käser A, Salathé CR, Barz T, Röder C, Theis J-C. Who is likely to develop persistent low back pain? A longitudinal analysis of prognostic occupational factors. Work. 2013; 46:297–311. [PubMed: 24004738]
96. Melloh M, Salathé CR, Elfering A, Käser A, Barz T, Aghayev E, Röder C, Theis J-C. Occupational, personal and psychosocial resources for preventing persistent low back pain. Int J Occup Saf Ergon. 2013; 19:29–40. [PubMed: 23498709]
97. Mikkelsson M, Kaprio J, Salminen JJ, Pulkkinen L, Rose RJ. Widespread pain among 11-year-old Finnish twin pairs. Arthritis Rheum. 2001; 44:481–5. [PubMed: 11229481]
98. Moldofsky H. Sleep and pain. Sleep Med Rev. 2001; 5:385–96. [PubMed: 12531004]
99. Monsivais DB, Engebretson JC. “I’m just not that sick”: pain medication and identity in Mexican American women with chronic pain. J Holist Nurs. 2012; 30:188–94. [PubMed: 22713604]
100. Morales LS, Lara M, Kington RS, Valdez RO, Escarce JJ. Socioeconomic, cultural, and behavioral factors affecting Hispanic health outcomes. J Health Care Poor Underserved. 2002; 13:477–503. [PubMed: 12407964]
101. Nguyen M, Ugarte C, Fuller I, Haas G, Portenoy RK. Access to Care for Chronic Pain: Racial and Ethnic Differences. J Pain. 2005; 6:301–14. [PubMed: 15890632]
102. NIH. NIH policy on reporting race and ethnicity data [Internet]. 2001. Available from: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-01-053.html
103. Nobis H-G, Pielsticker A. Medical education and communication in primary pain treatment: clinical relevance and pedagogic challenge. Schmerz. 2013; 27:317–24. [PubMed: 23736749]
104. Passel, J.; Livingston, G.; D’Vera, C. Pew Res Soc Demogr Trends. Washington, DC: 2012. Explaining Why Minority Births Now Outnumber White Births | Pew Research Center’s Social & Demographic Trends Project.

105. Patten, E. Statistical Portrait of the Foreign-Born Population in the United States, 2010 | Pew Research Center [Internet]; Pew Res Cent. p. 12012cited 2015 Jul 23. Available from: http://www.pewhispanic.org/2012/02/21/statistical-portrait-of-the-foreign-born-population-in-the-united-states-2010/
106. Pérez-Stable EJ, Nápoles-Springer A, Miramontes JM. The effects of ethnicity and language on medical outcomes of patients with hypertension or diabetes. Med Care. 1997; 35:1212–9. [PubMed: 9413309]
107. Plesh O, Adams SH, Gansky SA. Racial/Ethnic and gender prevalences in reported common pains in a national sample. J Orofac Pain. 2011; 25:25–31. [PubMed: 21359234]
108. Plesh O, Sinisi SE, Crawford PB, Gansky SA. Diagnoses based on the Research Diagnostic Criteria for Temporomandibular Disorders in a biracial population of young women. J Orofac Pain. 2005; 19:65–75. [PubMed: 15779541]
109. Portenoy RK, Ugarte C, Fuller I, Haas G. Population-based survey of pain in the united states: Differences among white, african american, and hispanic subjects. J Pain. 2004; 5:317–28. [PubMed: 15336636]
110. Quandt SA, Elmore RC, Arcury TA, Norton D. Eye Symptoms and Use of Eye Protection Among Seasonal and Migrant Farmworkers. South Med J. 2001; 94:603–7. [PubMed: 11440328]
111. Rahim-Williams FB, Riley JL, Herrera D, Campbell CM, Hastie BA, Fillingim RB. Ethnic identity predicts experimental pain sensitivity in African Americans and Hispanics. Pain. 2007; 129:177–84. [PubMed: 17296267]
112. Ramirez, MI. Psychol Am Mestizo Perspect Personal Ment Heal. New York, NY: Pergamon Press Inc; 1983. Coping with Diversity in the Americas: The need to integrate Mestizo and European Research Approaches and Methodologies; p. 93-117.
113. Reyes-Gibby CC, Aday LA, Todd KH, Cleeland CS, Anderson KO. Pain in aging community-dwelling adults in the United States: non-Hispanic whites, non-Hispanic blacks, and Hispanics. J Pain. 2007; 8:75–84. [PubMed: 16949874]
114. Riley JL, Gibson E, Zsembik BA, Duncan RP, Gilbert GH, Heft MW. Acculturation and orofacial pain among Hispanic adults. J Pain. 2008; 9:750–8. [PubMed: 18456564]
115. Rippentrop AE. A Review of the Role of Religion and Spirituality in Chronic Pain Populations. Rehabil Psychol. 2005; 50:278–84.
116. Riskowski JL. Associations of Socioeconomic Position and Pain Prevalence in the United States: Findings from the National Health and Nutrition Examination Survey. Pain Med. 2014; 15:1508–21. [PubMed: 25138172]
117. Rosenbaum DA, Grzywacz JG, Chen H, Arcury TA, Schulz MR, Blocker JN, Mora DC, Quandt SA. Prevalence of epicondylitis, rotator cuff syndrome, and low back pain in Latino poultry workers and manual laborers. Am J Ind Med. 2013; 56:226–34. [PubMed: 23109055]
118. Rutledge DN, Cantero PJ, Ruiz JE. Chronic pain management strategies used by low-income overweight Latinos. Chronic Illn. 2013; 9:133–44. [PubMed: 23129787]
119. Saha S, Komaromy M, Koepsell TD, Bindman AB. Patient-physician racial concordance and the perceived quality and use of health care. Arch Intern Med. 1999; 159:997–1004. [PubMed: 10326942]
120. Saha S, Taggart SH, Komaromy M, Bindman AB. Do patients choose physicians of their own race? Health Aff. 19:76–83.
121. Sandberg JC, Grzywacz JG, Talton JW, Quandt SA, Chen H, Chatterjee AB, Arcury TA. A cross-sectional exploration of excessive daytime sleepiness, depression, and musculoskeletal pain among migrant farmworkers. J Agromedicine. 2012; 17:70–80. [PubMed: 22191505]
122. Shavers VL, Bakos A, Sheppard VB. Race, ethnicity, and pain among the U.S. adult population. J Health Care Poor Underserved. 2010; 21:177–220. [PubMed: 20173263]
123. Sherwood GD, McNeill J, Palos G, Starck P. Perspectives on pain: A qualitative analysis of the Hispanic pain experience. J Res Nurs. 2003; 8:364–77.
124. Skalli S, Zaid A, Soulaymani R. Drug Interactions with Herbal Medicines. Ther Drug Monit. 2007; 29:679–86. [PubMed: 18043467]

125. Sleath B, Blalock SJ, Bender D, Murray M, Cerna A, Cohen MG. Latinos' sources of medication and medication information in the United States and their home countries. Patient Educ Couns. 2009; 75:279–82. [PubMed: 19046845]

126. Strine TW, Hootman JM. US national prevalence and correlates of low back and neck pain among adults. Arthritis Rheum. 2007; 57:656–65. [PubMed: 17471542]

127. Tait RC, Chibnall JT. Racial/ethnic disparities in the assessment and treatment of pain: Psychosocial perspectives. Am Psychol. 2014; 69:131–41. [PubMed: 24547799]

128. Thomason TE, McCune JS, Bernard SA, Winer EP, Tremont S, Lindley CM. Cancer Pain Survey. J Pain Symptom Manage. 1998; 15:275–84. [PubMed: 9654832]

129. Todd KH. The Effect of Ethnicity on Physician Estimates of Pain Severity in Patients With Isolated Extremity Trauma. JAMA American Medical Association. 1994; 271:925–8.

130. Townley S, Papaleontiou M, Amanfo L, Henderson CR, Pillemer K, Beissner K, Reid MC. Preparing to implement a self-management program for back pain in new york city senior centers: what do prospective consumers think? Pain Med. 2010; 11:405–15. [PubMed: 20088858]

131. U.S. Bureau of Labor Statistics. Labor Force Characteristics by Race and Ethnicity, 2011. Vol. 2012. Washington, DC: 2012.

132. Villarruel AM. Mexican-American cultural meanings, expressions, self-care and dependent-care actions associated with experiences of pain. Res Nurs Health. 1995; 18:427–36. [PubMed: 7676076]

133. Wang H, Papoiu ADP, Coghill RC, Patel T, Wang N, Yosipovitch G. Ethnic differences in pain, itch and thermal detection in response to topical capsaicin: African Americans display a notably limited hyperalgesia and neurogenic inflammation. Br J Dermatol. 2010; 162:1023–9. [PubMed: 20030637]

134. Wertli MM, Eugster R, Held U, Steurer J, Kofmehl R, Weiser S. Catastrophizing-a prognostic factor for outcome in patients with low back pain: a systematic review. Spine J. 2014; 14:2639–57. [PubMed: 24607845]

135. Xiao H, McCurdy SA, Stoecklin-Marois MT, Li C-S, Schenker MB. Agricultural work and chronic musculoskeletal pain among Latino farm workers: the MICASA study. Am J Ind Med. 2013; 56:216–25. [PubMed: 23023585]

136. Zettel-Watson L, Rutledge DN, Aquino JK, Cantero P, Espinoza A, Leal F, Jones CJ. Typology of chronic pain among overweight Mexican Americans. J Health Care Poor Underserved. 2011; 22:1030–47. [PubMed: 21841294]

Perspective

This critical review of the literature examines the pain and management experiences of the Hispanic American population. We propose a conceptual model, which highlights findings from the existing literature and future areas of research.

Highlights

- Hispanic Americans (HAs) report less chronic pain relative to non-Hispanic Whites.
- HAs use stoicism and religious coping as well as cultural remedies for pain care.
- HAs face access to pain care barriers and report negative attitudes towards opioids.
- Clinicians identified language barriers as a key challenge when treating HAs' pain.
- A proposed conceptual model highlights future areas of research.

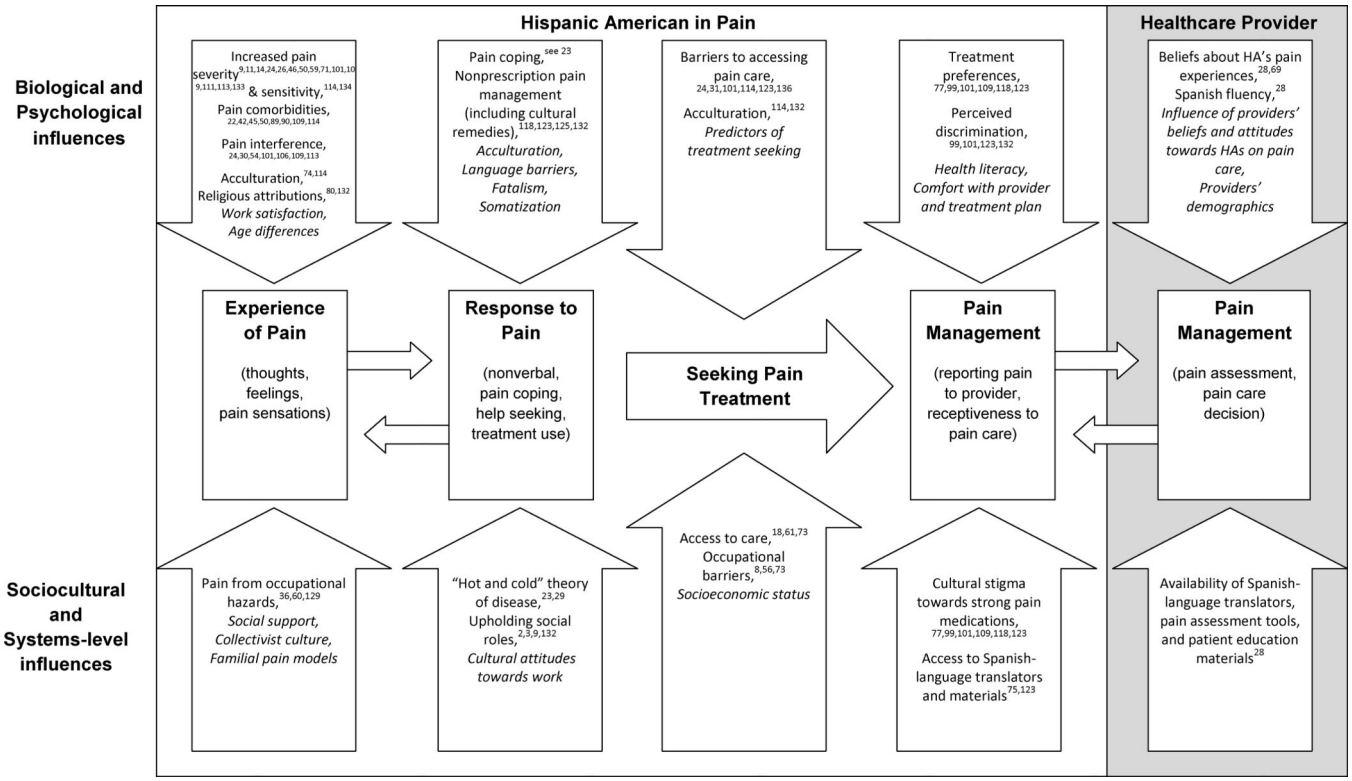

Figure 1.

Conceptual model of the pain experience of Hispanic Americans

A conceptual model of Hispanic Americans' (HAs') pain experience integrating biological, psychological, sociocultural, and systems-level influences at the level of interaction between a HA in pain and healthcare providers. Items inside of arrows are organized by quality and level of evidence. Text in italics indicates a proposed future research direction. (Adapted with kind permission from Craig, 2009, Fig 1, p.24).

Table 1

Racial/ethnic differences in pain conditions

Article	Type of pain	Results
Portenoy, et al. (2004)	Chronic (>3 months) … Nonmalignant pain … Head or neck pain … Shoulder/arms/hands pain … Chest pain … Abdomen pain … Back pain … Hip/legs/knee/feet	W>H†, B>H† H>W†, H>B$^{\pm}$ W>H*, B>H† H=W, H=B H>W*, H>B* H=W, H=B W>H†, B>H$^{\pm}$
Riskowski (2014)	Acute pain (<3 months) Chronic regional pain (≥3 months) Chronic widespread pain (≥3 months)	W=H & MA (males only), W=H & MA (females only) W>H & MA$^{\pm}$(males only), W>H & MA$^{\pm}$(females only) W>H & MA$^{\pm}$(males only), W>H & MA†(females only)
Carey, et al. (2010)	Chronic low back pain (>3 months) Chronic neck pain (>3 months)	W>H† W=H
Knox, Orchowski, & Owens (2012)	Acute lower back pain	W>H$^{\pm}$
Plesh, Adams, & Gansky (2011b)	During the past 3 months, experienced … TMJMD-type pain … Headache/migraine pain … Neck pain … Low back pain	W>H$^{\pm}$ W=H W>H$^{\pm}$ W>H$^{\pm}$
Strine & Hootman (2007)	During the past 3 months, experienced … Low back pain only … Neck pain only … Both low back and neck pain	W>H* W>H* W=H
CDC (2005)	Diagnosed with arthritis	W>H
Hardt, et al. (2008)	Chronic (≥3 months) … Regional pain … Widespread pain … Back pain … Legs/feet pain … Arms/hands pain … Head pain … Abdomen pain … Face/teeth pain … Chest pain	W>MA*, B>MA* W>MA*, B>MA* W>MA*, B>MA* W>MA*, B>MA* W>MA*, B>MA* W=MA, B=MA W=MA, B=MA W=MA, B=MA W=MA, B=MA

*p<.05,

†p<.01,

$^{\pm}$p<.001;

H=Hispanic, MA=Mexican American, W=White, B=Black